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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,769	09/29/2000	Katsuhiko Takahashi	35.C14833	8654

5514 7590 11/08/2002

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EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

15

DATE MAILED: 11/08/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

7215

Office Action Summary

Application No.

09/672,769

Applicant(s)

TAKAHASHI ET AL.

Examiner

Callie E. Shosho

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/3/02 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsutsumi et al. (U.S. 6,031,019) in view of Suzuki et al. (U.S. 6,153,001) and either Tsang et al. (U.S. 5,886,065) or Johnson et al. (U.S. 5,922,118).

Tsutsumi et al. disclose an aqueous ink jet ink comprising 0.1-15% polyhydric alcohol, 0.5-5% urea, and pigment fine particle encapsulated into fine polymer particles. It is noted that the broad disclosure of pigment clearly encompasses the use of carbon black. It is further disclosed that not all the colorant present in the ink is encapsulated into the polymer. Thus, it is clear that the ink of Tsutsumi et al. contains pigment and color-containing polymer as presently claimed. It is further disclosed that the fine polymer particles include those obtained from cationic monomers. There is also disclosed an ink jet ink printing method wherein the above inks are placed in an ink jet printer comprising a ink cartridge and then jetted onto a substrate (col.3, lines 49-50, col. 3, line 64-col.4, line 12, col.4, lines 20-22, col.6, lines 34-36 and 41-45, col.11, lines 38-44 and 61-67, col.13, line 31, col.14, lines 41-47, and col.15, lines 40-42). Although

there is no explicit disclosure of ink container, it is clear that the ink jet printer would intrinsically possess this component in order to store the ink.

The difference between Tsutsumi et al. and the present claimed invention is the requirement in the claims of (a) specific type of urea, (b) specific type of pigment, and (c) specific type of polyhydric alcohol.

With respect to difference (a), on the one hand, the broad disclosure by Tsutsumi et al. of urea clearly encompasses all types of urea including ethylene urea and propylene urea as presently claimed. Therefore, absent evidence to the contrary, it therefore would have been obvious to one of ordinary skill in the art to choose urea, including that presently claimed, and thereby arrive at the claimed invention.

On the other hand, Suzuki et al., which is drawn to ink inks, disclose the use of 0.5-15% ethylene urea in order to prevent nozzle clogging. Further, Suzuki et al. disclose the equivalence and interchangeability of urea, as disclosed by Tsutsumi et al., with ethylene urea.

In light of the motivation for using ethylene urea disclosed by Suzuki et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use ethylene urea in the ink jet ink of Tsutsumi et al. in order to produce an ink which will not clog the printer nozzles, and thereby arrive at the claimed invention.

With respect to difference (b), Tsang et al., which is drawn to ink jet inks, disclose the use of carbon black treated with cationic groups in order to produce an ink which is both waterfast and non-flocculating (col.2, lines 45-49 and col.5, lines 16-26).

Alternatively, Johnson et al. disclose the use of self-dispersing pigment suitable for use in ink jet inks wherein the pigment comprises carbon black having at least one attached cationic

group and wherein the motivation for using such pigment is that it produces an ink with improved waterfastness. Further, Johnson et al. disclose that the ink jet ink utilizing such treated pigment have improved optical density as compared to inks which comprise untreated pigments (col.4, lines 18-24, col.7, lines 41-57, and col.12, lines 1-14 and 52).

In light of the motivation for using specific type of pigment disclosed by either Tsang et al. or Johnson et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such pigment in the ink jet ink of Tsutsumi et al. in order to produce an ink which is both waterfast and non-flocculating or, alternatively, has improved waterfastness and optical density, and thereby arrive at the claimed invention.

With respect to difference (c), Tsutsumi et al. disclose the use of polyhydric alcohol but do not disclose any specific types.

Suzuki et al. disclose the use of polyhydric alcohol such as polyethylene glycol, 1,5-pentanediol, and 1,2,6-hexanetriol in order to prevent water from evaporating from the ink (col.12, lines 14-21).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to use polyhydric alcohols such as polyethylene glycol, 1,5-pentanediol, and 1,2,6-hexanetriol in the ink jet ink of Tsutsumi et al., and thereby arrive at the claimed invention.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (U.S. 6,153,011) in view of Tsutsumi et al. (U.S. 6,031,019).

Suzuki et al. disclose an aqueous ink jet ink comprising self-dispersing pigment fine particle which has cationic hydrophilic groups wherein the pigment includes carbon black, 0.5-

15% ethylene urea which is identical to presently claimed compound (I), and 1-60% polyhydric alcohol such as polyethylene glycol, 1,5-pentanediol, and 1,2,6-hexanetriol. There is also disclosed an ink jet ink printing method wherein the above inks are placed in an ink jet printer and then jetted onto a substrate (col.7, lines 5-12 and 35-38, col.9, lines 36-39, col.12, lines 19-20, 41-46, and 67, col.13, lines 1-7, and col.15, lines 34-57). Although there is no explicit disclosure of ink cartridge or ink container, it is clear that the ink jet printer would intrinsically possess these components to in order to store the ink.

The difference between Suzuki et al. and the present claimed invention is the requirement in the claims of color-containing resin.

Tsutsumi et al., which is drawn to ink jet inks, disclose the use of pigment fine particle encapsulated into fine polymer particles wherein the polymer is obtained from cationic monomer (col.3, line 65-col.4, line 12, col.4, lines 20-22, and col.6, lines 34-36 and 41-45) in order to produce an ink with improved waterfastness and anti-feathering properties (col.2, lines 41-43).

In light of the motivation for using color-containing resin disclosed by Tsutsumi et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such color-containing resin in the ink jet ink of Suzuki et al. in order to produce an ink with improved waterfastness and anti-feathering properties, or alternatively, excellent stability and lightfastness, and thereby arrive at the claimed invention.

Response to Arguments

6. Applicants' arguments filed 9/3/02 have been fully considered but they are not persuasive.

Specifically, in response to examiner's position set forth in the Advisory Action mailed 8/14/02 that the unexpected results shown by the 1.132 declaration filed 7/31/02, which establishes the criticality of using ethylene urea as compared to urea, were not persuasive because the specification as originally filed did not disclose that the ethylene urea effects phase separation or storage stability as set forth in the declaration and further in response to examiner's citing of *In re Davies et al.*, 177 USPQ 381 (CCPA 1973) where the courts held that a "basic property or utility must be disclosed in order for affidavit evidence of unexpected properties to be offered", applicants argue that the 1.132 declaration must be considered by the examiner and have cited *In re Chu*, 36 USPQ2d 1089, 1094-95 (Fed. Cir. 1995) in support of their position.

However, applicants have not shown how *Chu* is relevant to the present fact situation or why *Chu* is more relevant than the case law cited by the examiner, namely, *Davies*.

Further, it is the examiner's position that the present situation is different than that in *Chu* given that in *Chu*, the examiner argued that claimed feature not taught in the prior art was a matter of "design choice" and therefore obvious. *Chu* responded with evidence of why the claimed feature was not merely a design choice. In the present situation, however, there is strong motivation to use the claimed feature, i.e. ethylene urea. In one rejection of record, i.e. *Tsutsumi et al.* in view of *Suzuki et al.* (see paragraph 4 above), *Suzuki et al.* teach the equivalence and interchangeability of urea, as disclosed by *Tsutsumi et al.*, with ethylene urea, as presently claimed, wherein the ethylene urea is used to prevent nozzle clogging. In the other rejection of record, i.e. *Suzuki et al.* in view of *Tsutsumi et al.* (see paragraph 5 above), *Suzuki et al.* already discloses the use of ethylene urea. In neither case, is the use of ethylene urea a "design choice"

but rather the case for obviousness is based on proper motivation and explicit disclosures in the cited references themselves.

Additionally, it is noted that while the present specification states that the presently claimed ink is superior given that it does not exhibit intermittent ejection defect due to inhibition of increase in viscosity and film formation or solidification or exhibits minimal adhesion of thickened ink to ejection port surface, there is no disclosure regarding phase separation or storage stability in the present specification. Further, there is no disclosure in the 1.132 declaration regarding intermittent ejection defect, viscosity, film formation or solidification, or adhesion of thickened ink to ejection port surface as disclosed in the present specification. Further, applicants have not shown if or how the phase separation or storage stability as disclosed in the 1.132 declaration is related to the properties disclosed in the present specification.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

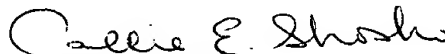
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Application Number: 09/672,769

Page 9

Art Unit: 1714

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho

Examiner

Art Unit 1714

CS

November 6, 2002